

CLAIMS

1. A polyolefin article characterized as being composed of polyolefin and as including an oriented polyolefin material so that its average coefficient of linear expansion is maintained at a value of not exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the $20 - 80^{\circ}\text{C}$ range.

2. The polyolefin article as recited in claim 1, characterized in that said oriented polyolefin material is formed of high-density polyethylene.

3. The polyolefin article as recited in claim 2, characterized in that said high-density polyethylene has a weight-average molecular weight within the range of 100,000 - 500,000.

4. The polyolefin article as recited in any one of claims 1 - 3, characterized in that said oriented polyolefin material is provided in a sheet form.

5. A method for manufacture of a polyolefin article characterized as including the steps of:

depositing, on a surface of an oriented polyolefin material having a value of not exceeding 5×10^{-5} ($^{\circ}\text{C}$) for average coefficient of linear expansion in the $20 - 80^{\circ}\text{C}$ range, a low-molecular compound capable of dissolving the polyolefin; and

subsequent to the deposition of said low-molecular

compound, effecting bonding of said oriented polyolefin material by the application of pressure and heat.

6. The method for manufacture of a polyolefin article as recited in claim 5, wherein said low-molecular compound
5 is a polymerizable monomer.

7. The method for manufacture of a polyolefin article as recited in claim 5 or 6, wherein said oriented polyolefin material is provided in a sheet form and wherein the oriented polyolefin sheet is bonded to an oriented or
10 unoriented polyolefin sheet by the application of pressure and heat.

8. The method for manufacture of a polyolefin article as recited in any one of claims 5 - 7, characterized in that said oriented polyolefin material is an oriented polyolefin
15 sheet having a minus value for average coefficient of linear expansion in the 20 - 80 °C range, and that said oriented polyolefin sheet is superposed on an oriented or unoriented polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 - 80 °C range for subsequent
20 bonding thereof by the application of pressure and heat.

9. A method for manufacture of a polyolefin article characterized as including the steps of:

covering an oriented polyolefin material having a value of not exceeding 5×10^{-5} (/°C) for average coefficient of
25 linear expansion in the 20 - 80 °C range with a layer of

polyolefin having a melting point lower than that of said oriented polyolefin material;

subsequent to the covering with the polyolefin layer, effecting joining of the oriented polyolefin material by the application of pressure and heat at a temperature below the melting point of the oriented polyolefin material but sufficient to soften or melt said covering polyolefin.

10. The method for manufacture of a polyolefin article as recited in claim 9, characterized in that said oriented polyolefin material comprises a plurality of oriented polyolefin sheets having minus values for average coefficient of linear expansion in the 20 - 80 °C range, and that an oriented or unoriented polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 - 80 °C range is interposed between adjacent ones of said oriented polyolefin sheets covered with said polyolefin layer for subsequent joining by the application of pressure and heat.

11. The method for manufacture of a polyolefin article as recited in any one of claims 5 - 10, characterized in that said oriented polyolefin material is prepared by subjecting an oriented polyolefin material having a value of not exceeding 5×10^{-5} (/°C) for average coefficient of linear expansion in the 20 - 80 °C range to a heat treatment so that its surface once melts.

12. The method for manufacture of a polyolefin article as recited in any one of claims 5 - 10, characterized as including the steps of:

5 subjecting an oriented polyolefin material having a value of not exceeding 5×10^{-5} (/°C) for average coefficient of linear expansion in the 20 - 80 °C range to a heat treatment so that its surface melts; and

10 effecting joining of said oriented polyolefin material by the application of pressure and heat at a temperature below a melting point of the heat-treated oriented polyolefin material but sufficient to melt said surface.